

Area and Volume

Practice Test

1. Find the area of a square with a side length of 8.2 in.

$$A = l \times w$$

$$A = 8.2 \times 8.2$$

$$A = 67.24 \text{ in}^2$$

2. A rectangle has a length of 25 cm and a width of 50 cm. What is its area?

$$A = l \times w$$

$$A = 25 \times 50$$

$$A = 1250 \text{ cm}^2$$

3. A triangle has a base of 80 cm and a height of 10 cm. What is its area?

$$A = \frac{1}{2}bh$$

$$A = \frac{1}{2} \cdot 80 \cdot 10$$

$$A = 400 \text{ cm}^2$$

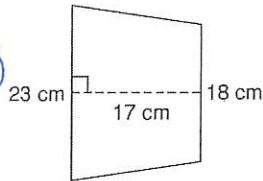
4. What is the area of the trapezoid?

$$A = \frac{1}{2} \cdot h \cdot (b_1 + b_2)$$

$$A = \frac{1}{2} \cdot 17 \cdot (23 + 18)$$

$$A = \frac{1}{2} \cdot 17 \cdot (41)$$

$$A = \frac{1}{2} \cdot 697$$



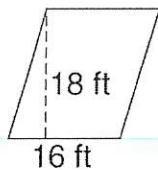
F 174.25 cm^2

H 348.5 cm^2

G 306 cm^2

J 697 cm^2

5. Find the area of the parallelogram below.

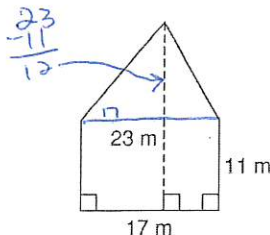


$$A = b \cdot h$$

$$A = 16 \cdot 18$$

$$A = 288 \text{ ft}^2$$

6. What is the area of the polygon?



$$A = \frac{1}{2} \cdot b \cdot h$$

$$A = \frac{1}{2} \cdot 17 \cdot 11$$

$$A = 93.5$$

$$A = 6 \cdot 17$$

$$A = 102$$

$$A = l \times w$$

$$A = 17 \times 11$$

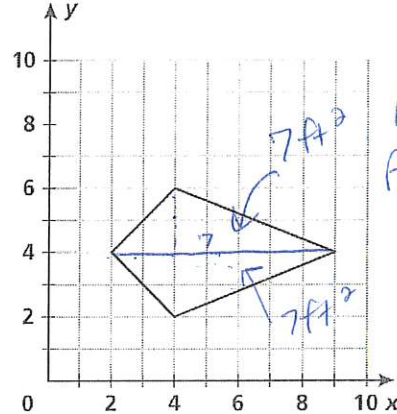
$$A = 187$$

$$187$$

$$+ 102$$

$$289 \text{ m}^2$$

7. A landscaper wants to create an area as shown in the grid below covered with paving stones. What is the area to be covered?



$$A = \frac{1}{2} \cdot b \cdot h$$

$$A = \frac{1}{2} \cdot 7 \cdot 2$$

$$A = \frac{1}{2} \cdot 14$$

$$A = 7$$

F 10 ft^2

H 14 ft^2

G 12 ft^2

J 28 ft^2

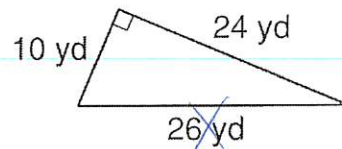
8. A rectangle has a length of 9 cm and a width of 14 cm. What is its area?

$$A = l \times w$$

$$A = 9 \times 14$$

$$A = 126 \text{ cm}^2$$

9. A triangle has a base of 24 yd and a height of 10 yd. What is its area?



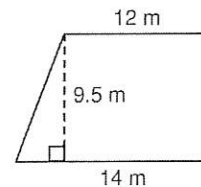
$$A = \frac{1}{2} \cdot b \cdot h$$

$$A = \frac{1}{2} \cdot 10 \cdot 24$$

$$A = 5 \cdot 24$$

$$A = 120 \text{ yd}^2$$

10. What is the area of the trapezoid?



$$A = \frac{1}{2} \cdot h \cdot (b_1 + b_2)$$

$$A = \frac{1}{2} \cdot 9.5 \cdot (12 + 14)$$

$$A = \frac{1}{2} \cdot 9.5 \cdot (26)$$

$$A = 123.5 \text{ m}^2$$

$$2$$

$$13$$

$$\times 9.5$$

$$165$$

$$1170$$

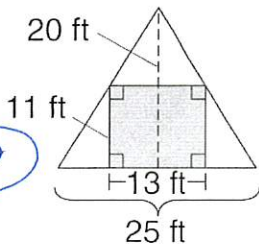
$$1235$$

Name _____

Date _____

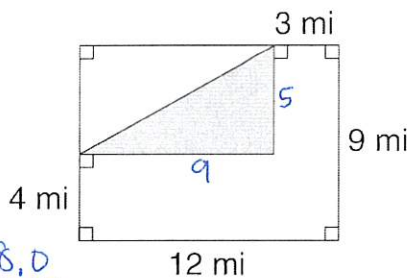
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11. Find the area of the WHITE part of the figure below.



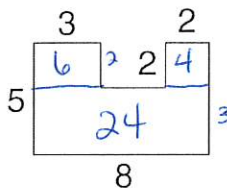
$$\begin{aligned} \Delta A &= \frac{1}{2}bh \\ &= \frac{1}{2} \cdot 25 \cdot 20 \\ &= 10 \cdot 25 \\ A &= 250 \\ \square A &= l \times w \\ A &= 13 \times 11 \\ A &= 143 \end{aligned}$$

12. Find the area of the WHITE part of the figure below.



$$\begin{aligned} \square A &= bh \\ A &= 12 \times 9 \\ A &= 108 \\ \Delta A &= \frac{1}{2}bh \\ \frac{1}{2} \cdot 5 \cdot 9 \\ \frac{1}{2} \cdot 45 \\ 22.5 \end{aligned}$$

13. Find the area of the figure below.

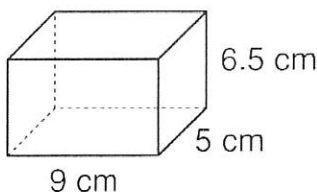


$$\begin{aligned} &24 \\ &6 \\ &+ 4 \\ \hline &34 \text{ units}^2 \end{aligned}$$

14. What is the capacity of a rectangular prism with side lengths 14 m, $2\frac{1}{4}$ m, and 3 m?

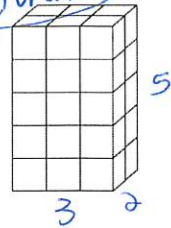
$$\begin{aligned} V &= l \times w \times h \\ V &= 14 \times 2.25 \times 3 \\ V &= 94.5 \\ V &= 94\frac{1}{2} \text{ m}^3 \end{aligned}$$

15. What is the volume of this figure?



$$\begin{aligned} V &= l \times w \times h \\ V &= 9 \times 5 \times 6.5 \\ V &= 292.5 \text{ cm}^3 \end{aligned}$$

16. Find the volume.

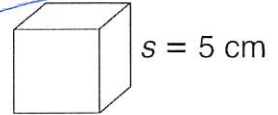


17. Find the surface area.

$$\begin{aligned} \text{front} & 3 \times 5 = 15 \\ \text{back} & = 15 \\ \text{top} & 3 \times 2 = 6 \\ \text{bottom} & = 6 \\ \text{left} & 5 \times 2 = 10 \\ \text{right} & = 10 \end{aligned}$$

18. Find the volume.

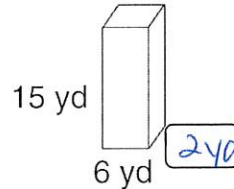
$$\begin{aligned} V &= s \times s \times s \\ V &= 5 \times 5 \times 5 \\ V &= 125 \text{ cm}^3 \end{aligned}$$



19. Find the surface area.

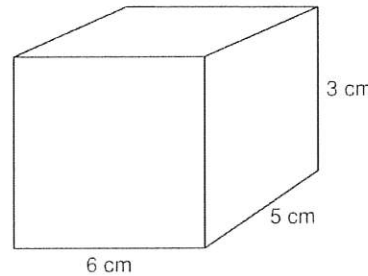
$$\begin{aligned} \text{one face is } 5 \times 5 &= 25 \\ \text{there are six faces, so } 25 \times 6 &= 150 \text{ cm}^2 \end{aligned}$$

20. If the volume is 180 yd³, what is the width?



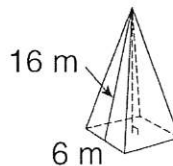
$$\begin{aligned} V &= l \times w \times h \\ 180 &= 6 \times w \times 15 \\ 180 &= 90w \\ \frac{180}{90} &= w \\ 2 &= w \end{aligned}$$

21. How many square cm of paint would it take cover this figure? (surface area)



$$\begin{aligned} \text{front } 6 \times 3 &= 18 \\ \text{back} &= 18 \\ \text{top } 6 \times 5 &= 30 \\ \text{bottom} &= 30 \\ \text{left } 5 \times 3 &= 15 \\ \text{right} &= 15 \end{aligned}$$

22. What is the surface area of this figure?



$$SA = 228 \text{ m}^2$$



23. Draw a net of a square pyramid.

24. Draw two different nets for a cube.

